

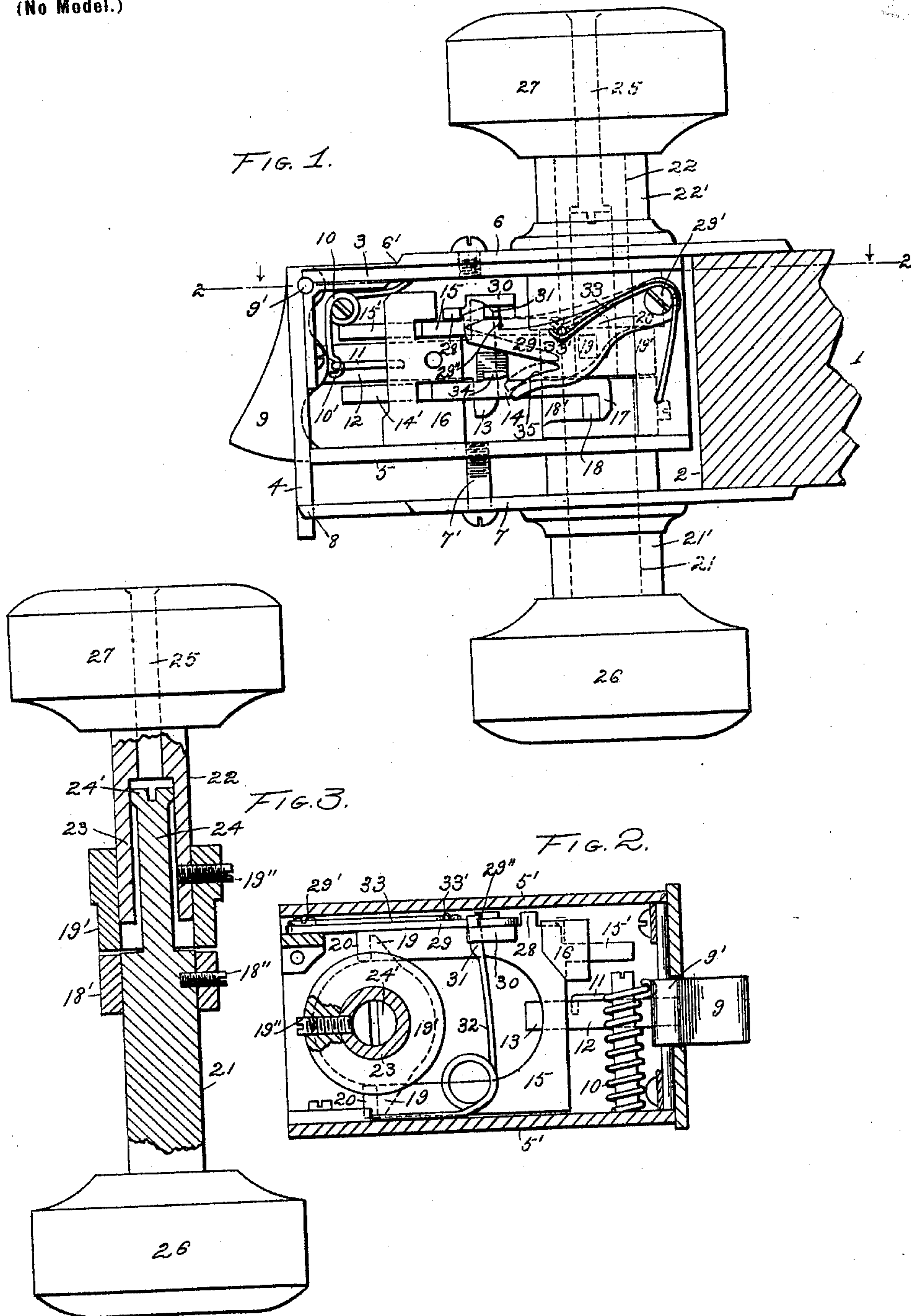
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Patented June 6, 1899.

B. PHELPS.  
LOCK.

(Application filed Mar. 8, 1898. Renewed Jan. 6, 1899.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## LOCK.

SPECIFICATION forming part of Letters Patent No. 626,344, dated June 6, 1899.

Application filed March 8, 1898. Renewed January 6, 1899. Serial No. 701,416. (No model.)

*To all whom it may concern:*

Be it known that I, BYRON PHELPS, a citizen of the United States of America, and a resident of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to new and useful improvements in the construction of locks; and it consists in the matters hereinafter described, and pointed out in the appended claims.

The object of my invention is to provide an improved lock; and one of the principal objects embraced therein is to provide a lock which has two spindles, either of which may actuate the latch-bolt, said lock having means to prevent a second retraction of said bolt by one of said spindles operated by the rotation of that spindle. Other advantages of my construction will appear from the following description and the accompanying drawings.

To this end I preferably construct my improved form of lock in substantially the manner illustrated in the drawings, in which—

Figure 1 is a top view of a lock constructed in accordance with my invention and illustrates the same as fitted within an edge notch in a door. Fig. 2 is a vertical cross-sectional view of the same, taken on line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional view of the knob-spindle and connected parts.

Like characters of reference designate like parts of the structure throughout the several views of the drawings.

Referring more particularly to said drawings, the numeral 1 designates the edge of a door provided with an edge notch, as 2, for the reception of the lock. The lock-frame conveniently comprises a notch-plate 3, a face-plate 4, and main frame 5, and, if desired, top and bottom plates 5', as in Fig. 2. A side plate 6 is affixed to the notch-plate 3, or, if preferred, may be made integral therewith, said side plate being so arranged with reference to said notch-plate as to leave an offset, as 6', equal in width to the overlapping of the door upon the door-jamb. Upon the opposite side of the lock from the side plate 6 is conveniently provided an adjustable side plate 7, secured to the lock-frame by a screw or screws 7', entering the frame-plate 5. The

face-plate 4 is arranged to extend between lugs or ears 8 upon an extension upon the adjustable side plate 7, said extension serving to cover the side of the notch opposite to the notch-plate 3.

The above-described form of lock-frame is preferably of substantially the same construction as is described in a prior application for patent, originally filed by me on March 10, 1897, and renewed December 5, 1898, Serial No. 698,371, and hence forms no part of my present invention.

A latch-bolt, as 9, is mounted in the lock-frame in any convenient or desired manner, as by the pivotal connection 9', and a spring, as 10, suitably mounted in the lock-frame, serves to actuate said latch-bolt conveniently by engagement, as at 10', with a hook or equivalent device, as 11, on the shank 12 of the latch-bolt. This shank 12 conveniently terminates in a substantially T-shaped head, the lateral projections 13 of which serve to engage with independent yokes 14 and 15, as shown. These yokes have guiding-arms, as 14' and 15', which rest in slidable engagement with a guide-block 16, suitably mounted in the lock-frame and arranged to insure rectilinear movements of the yokes 14 and 15.

The yokes 14 and 15 terminate in angular projections 17 and 20, respectively adapted for engagement with projections 18 and 19 upon cam-collars 18' and 19'.

The cam-collars 18' and 19' are respectively secured, as by screws 18'' and 19'', to knob-spindle members 21 and 22, independently rotatable in tubular bearings 21' and 22', respectively, and the spindle member 22 being made tubular at its inner end, as at 23, to receive a projecting stem 24 upon the spindle member 21. The end of the stem 24 is conveniently slotted or otherwise shaped for engagement with a key inserted through a key-way 25 in the knob 27 upon the outer end of the spindle member 22.

A knob 26 is fitted to the end of the spindle member 21, as in Figs. 1 and 3 of the drawings.

Upon the yoke 15 is provided a projecting lug or shoulder, as 28, adapted for engagement with a detent 29, as will be presently described. The detent 29 is suitably mount-



ed in the lock-frame, conveniently by a pivotal connection or support 29', and is provided adjacent to its free end with a notch or offset 29". A guide 30 is provided at the side of the yoke 15 to receive the free end of a spring-pressed arm 31, conveniently formed upon the end of a spring 32, suitably secured to the lock-frame, and a spring 33 is suitably engaged with and engages at its free end with the pivoted detent 29, as at 33'.

Upon the yoke 14 is conveniently provided a projection 34, and the detent 29 is conveniently slotted or notched, as at 35, so as to present an oblique edge for engagement with said projection on the actuation of the yoke 14, for a purpose which will be presently described.

In Fig. 1 of the drawings the mechanism is shown in full lines as in condition for operation by either knob and in dotted lines as locked against operation by the knob 27.

The operation of my improved lock is as follows: Assuming that the parts of the mechanism are in the relative positions shown by the full lines in Fig. 1 and that the knob 27 is operated, the partial rotation of the knob 27 will impart a corresponding partial rotation to the spindle member 22, thus operating the cam 19' and moving the yoke 15 longitudinally to retract the latch-bolt 9. It will be observed by reference to Fig. 1 that in the initial positions of the parts the detent 29 rests against the side of the spring-pressed arm 31, and the nose of said detent is thereby held out of line with the shoulder or lug 28 on the yoke 15, the spring 33 serving to press said detent against said arm. It will also be observed that by reason of the engagement of the spring-pressed arm 31 with the yoke 15 the movement of said yoke that retracts the latch-bolt 9 will carry the said arm 31 past the notch or offset 29" in the side or edge of the detent 29 and that on the return movement of said parts the spring 33 will press the said detent into the position indicated in dotted lines in Fig. 1, the nose of said detent passing into line with the lug or shoulder 28, and thereby locking the yoke 15, the knob 27, and the spindle member 22 against rotation, while at the same time the notch 29" in the detent engages with the spring-pressed arm 31 and prevents the return of said arm to its normal position. In this condition the mechanism is effectually locked against operation by the knob 27, although in condition for operation by the knob 26. Now, assuming that the door be simply pushed into its closed position without rotation of the knob 26, the operator having entered through the door, it will be observed that the door will be locked against any person or persons upon the outside of the door, while free for operation by the person within. Now when the operator wishes to open the door from within he rotates the knob 26, thus moving the yoke 14 and retracting the latch-bolt, as before; but the longitudinal movement of the yoke

14 brings the projection 34 into engagement with the oblique side of the slot or notch 35 in the detent 29, so as to crowd said detent from the position indicated by the dotted lines into the position shown by full lines in Fig. 1, thus freeing the spring-pressed arm 31 and permitting said arm to return to its normal position, and it follows that when the knob 26 is released and the yoke 14 and the latch-bolt return to their normal positions the detent will again rest against the said arm 31 and be held out of line with the shoulder or lug 28 on the yoke 15, thus again setting the mechanism for operation by the knob 27.

It will be understood, of course, that in this embodiment the movement of the latch-bolt in closing the door does not affect the position of either of the yokes 14 or 15, the engagement of said yokes with the shank of the latch-bolt being simply by contact of said yokes with the angular projections 13 on said shank.

If when the mechanism has been set, as in Fig. 1, an operator should rotate the knob 27 without opening the door, it will be seen that the mechanism will be locked so that a second rotation of said knob 27 will be impossible, and it becomes necessary, in order to provide for the opening of the door when accidentally locked in this manner, to provide the described means for actuation by a key to retract the bolt.

The key may be readily inserted in the keyway 25, engaged with the end 24' of the stem 24 on the spindle member 21, when by rotation of said key the spindle member 21 may be actuated so as to move the yoke 14, and thus retract the bolt and give access through the door.

My improved form of lock is simple and strong in its construction, satisfactory in its operation, and contains no intricate or complicated parts liable to get out of order, while by the described construction of the lock-frame it is rendered adjustable for use upon doors of different thicknesses.

It will be obvious that many changes may be made in the construction herein disclosed without departing from the spirit of my invention. I do not, therefore, desire to limit myself to the construction herein disclosed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A lock, comprising a suitable frame, a latch-bolt, a knob-spindle consisting of two members adapted to independently actuate the bolt, means operated by one spindle member to lock the same from a second rotation, and means operated by the other spindle member for disengaging said locking means, substantially as described.

2. A lock, comprising a suitable frame, a latch-bolt, a knob-spindle consisting of two members adapted for independent rotation, independent yokes arranged to independently



engage the bolt to retract same and operatively engaging with the respective spindle members, means operated by one spindle member to lock the same from a second rotation, and means operated by the other spindle member to disengage said locking means, substantially as described.

3. A lock, comprising a suitable frame, a latch-bolt, a knob-spindle consisting of two independently-rotatable members, yokes independently engaging with said latch-bolt and the respective spindle members and adapted for independent reciprocation in said frame, means operated by one spindle member and adapted to engage with the connected yoke to lock said yoke and spindle member from a second operation, and means operated by the other spindle member to disengage said locking means, substantially as described.

4. A lock comprising a suitable frame, a latch-bolt, a divided knob-spindle, yokes independently engaging with the latch-bolt and respective spindle members, a detent mounted for reciprocation in said frame, means operated by one spindle member to adjust said detent to lock said spindle member and the connected yoke from a second operation, and means operated by the other spindle member to retract said detent and free the first-mentioned spindle member and yoke, substantially as described.

5. A lock, comprising a suitable frame, a latch-bolt mounted for reciprocation therein, a knob-spindle consisting of independently-rotatable members, yokes slidable in the lock-frame and independently engaging with the latch-bolt and with the respective spindle members, a detent mounted for reciprocation in said frame, a projection or shoulder on one yoke, means for normally holding said detent out of line with said shoulder, other means for adjusting said detent into line with said shoulder upon an operation of the respective spindle member, and means operated by the other spindle member to retract said detent and free the first-mentioned spindle member and yoke, substantially as described.

6. A lock comprising a suitable frame, a latch-bolt, a knob-spindle consisting of two independently-rotatable members, yokes independently engaging with said latch-bolt and with the respective spindle members, a projection or shoulder on one yoke, a detent

mounted for reciprocation in the lock-frame and arranged to move into line with said shoulder, a spring-pressed arm adapted to normally hold said detent out of line with said shoulder and adjustable by movement of said yoke, to free the detent and permit the same to move into line with said shoulder to lock said yoke and the connected spindle member from a second operation, and a projection on the other yoke for engagement with said detent to retract the same upon an operation of the other spindle member, substantially as described.

7. A lock comprising a suitable frame, a latch-bolt, a knob-spindle consisting of two members adapted to independently actuate the bolt, means operated by one spindle member to lock the same from a second rotation, means operated by the other spindle member to disengage said locking means, and means adapted for operation by a key inserted into the first-mentioned spindle member to also disengage said locking means, substantially as described.

8. In a lock in combination latch mechanism embracing a latch-bolt, a rotatable spindle member connected therewith to retract the same, means, to prevent a second retraction of said bolt by said spindle, operated by the rotation of said spindle.

9. In a lock in combination a latch-bolt, two rotatable spindle members each adapted to actuate said bolt, means operated by the rotation of one spindle member to lock said bolt from a second actuation thereby, and means operated by the other spindle member for disengaging said locking means.

10. In a lock in combination, a latch-bolt, two spindle members adapted for independent rotation, independent yokes arranged to independently actuate said bolt and each connected with one spindle member, means operated by one spindle member to lock said bolt from a second actuation thereby, and means operated by the other spindle member to disengage said locking means.

Signed by me, at Seattle, Washington, this 28th day of February, 1898.

BYRON PHELPS.

Witnesses:

H. B. SLAUSON,  
J. W. LANGLEY.